

NAGACO.005CP3

CLAIMS FOR DISCUSSION

1. - 23. (Withdrawn)

24. (Previously Presented) A method of conducting an assay employing an optical disc, said method comprising the steps of:

providing a sample of cells on a disc surface of the optical disc, wherein the optical disc includes a capture zone;

loading the optical disc into an optical reader;

rotating the optical disc, such that at least some of the sample of cells are captured at the
~~the optical disc including a capture zone;~~

directing a beam of electromagnetic radiation to the capture zone of the rotating optical disc;

detecting an interaction of the beam of electromagnetic radiation with at least one
detected of the cells portions of a cells captured at the capture zone;

converting information relating to the detected interaction into an image signal, of the at
least one detected cell ~~the detected cells;~~ and

analyzing the image signal to extract information about the at least one detected cell,
~~captured at the capture zone;~~ wherein analyzing the image signal comprises performing a
convolution of the image signal and

wherein the information identifies a type of the at least one detected cells.

25. (Previously Presented) The method according to claim 24 further comprising the step of staining the cell material captured at the capture zone with a dye that absorbs light at a wavelength.

26. (Cancelled)

27. (Original) The method according to claim 25 wherein said dye absorbs light within the infrared spectral range.

28. (Original) The method according to claim 25 wherein said dye is a near-infrared absorbing stain.

29. (Original) The method according to claim 25 wherein said dye absorbs light within the ultra violet spectral range.

30. (Original) The method according to claim 25 wherein said dye absorbs light within the visible spectral range.

31. (Previously Presented) The method according to 25 wherein said electromagnetic radiation has a wavelength within 10 nm of the absorbance wavelength of said dye.

32. (Previously Presented) The method according to claim 25 wherein said dye is selected from the group consisting of LI-COR IRDye38, ITO-PRO-5-iodide, IR-780 iodide, Laser Pro IR, dd-007, idocyanine green, copper phthalocyanine, 3,3'-diethylthiatricarbocyanine iodide (DTTCI), 3,3'-diethyloxatricarbocyanine iodide (DOICI), 3,3'-diethylthiadibocyanine iodide (DTDCI), and 3,3'-diethyloxadibocyanine iodide (DODCI).

33. (Previously Presented) The method according to claim 25 wherein said dye labels one or more compartments of the cell captured at the capture zone.

34. (Previously Presented) The method according to claim 33 wherein said compartments include the nucleus, nucleolus, nuclear envelope, golgi apparatus, endoplasmic reticulum, mitochondria, vacuoles, peroxisomes, microtubules, centrioles, ribosomes, cell membrane, and cell wall.

35. (Previously Presented) The method according to claim 24 wherein said step of providing a sample of cells comprises smearing the sample of cells on the disc surface.

36. - 40. (Withdrawn)

41. (New) The method of Claim 24, further comprising generating a count of the number of the at least one detected cells of the type.
42. (New) The method of Claim 24, wherein generating a count comprises ~~ing~~ counting a bright centers of the at least one ~~of the~~ detected cells.
43. (New) The method of Claim 24, wherein performing the convolution comprises integrating at least a portion of the image signal to produce the extracted information.
44. (New) The method of Claim 24, wherein generating a count comprises ~~ing~~ counting a dark rim of the at least one ~~of the~~ detected cells.
45. (New) The method of Claim 24, wherein performing the convolution comprises convolving at least a portion of the image signal with a toroid. (ring having an inner and outer radius).
46. (New) The method of Claim 24, wherein analyzing the image signal comprises correcting fluctuations of the background the image signal.
47. (New) The method of Claim 24, wherein analyzing the image signal comprises normalizing the image signal.
48. (New) The method of Claim 47, wherein normalizing the image signal comprises performing a linear transform of the image signal.
49. (New) The method of Claim 24, wherein analyzing the image signal comprises filtering the image signal.
50. (New) The method of Claim 24, wherein analyzing the image signal comprises removing irregularities from the image signal.

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